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ABSTRACT

The document contains a review of the literature on screening for learning disabilities; a report of a Macomb, Illinois, study testing the Myklebust Learning Quotient method of identifying learning disabilities; and guidelines for learning disability eligibility screening in the Macomb schools. In the introduction, characteristics of the learning disabled child are considered, and the Myklebust formula, which looks at the ratio of actual achievement level to expected achievement level, is explained. Studies evaluating the formula are noted. The Macomb study used the formula with 163 children previously diagnosed as learning disabled. Ss in grades 1 through 12 were given the Kuhlman-Anderson test (to generate mental age), the Peabody Individual Achievement Test, and the Science Research Associates Achievement Series. Wechsler Intelligence Scale scores were also used when available to calculate learning quotient according to the Myklebust formula. Results indicated that use of the formula would decrease the number of children labeled learning disabled from 6% of the total school population to 4%. Modifications of the formula when applied to grades 1 and 2 and to high school aged students are proposed. The third section presents the screening steps to be used in applying the eligibility formula in the Macomb schools with separate guidelines for grades 1 and 2, 3 and 8, and high school. Also provided are forms for recording results of eligibility screening. Appended are statistical tables detailing results of the study. (DB)

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A LEARNING DISABILITIES ELIGIBILITY SCREENING PROCEDURE

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Chicago, Illinois
October 1981

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I. INTRODUCTION

The Learning Disability Eligibility Screening procedure has been developed by the Macomb Community Schools to assist the regular classroom teacher and the learning disability teacher identify and more appropriately serve children who are learning disabled. It is hoped that this procedure will maximize the service available to children and minimize the time spent determining eligibility.

Conservative estimates indicate that from one to three percent of school aged children have a learning disability serious enough to require special education services. Studies have also established that many less severely disabled students are handled routinely by the regular classroom teacher and if counted could raise the total number of LD children to as high as seven percent.

The term "learning disability" has emerged after decades of confusion regarding various groups of children experiencing similar difficulties. It has included such terms as neurologically impaired, word blindness, Strauss syndrome, minimal brain dysfunction, brain injury, minimal brain damage, perceptual disorder, and dyslexia. The lack of a common definition for LD has caused many lay people and professionals alike to inaccurately equate learning disabilities with learning problems of almost any type. The Specific Learning Disabilities Amendment of P.L. 94-142 has provided a definition designed to resolve this confusion.

> Specific learning disability means a disorder. . . which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and

> developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (Federal Register, 1977)

It is clear that LD children are not a homogenous group. They have been generally characterized with some of the following attributes: 1) hyperactivity, 2) high distraction rate, 3) easy frustration, 4) perseveration, 5) motor deficits, 6) short attention span, 7) impulsiveness, 8) short memory span, and 9) disturbed self-concept and body image.

It is important to note that many children who have a learning disability may not qualify to receive special education services. To qualify as a handicapped child who is learning disabled the child will "not achieve commensurate with his or her age and ability levels (and exhibit) a severe discrepancy between achievement and intellectual ability in one or more of the following areas: 1) oral expression, 2) listening comprehension, 3) written expression, 4) basic reading skill, 5) reading comprehension, 6) mathematics calculation, or mathematics reasoning." (Federal Register, 1977) The child must exhibit a severe discrepancy between ability and achievement to be considered eligible for special education and related services.

Identification of Learning Disabled Children

There is general agreement that considerable inconsistency exists in the identification of learning disabled children and that the process is certainly unreliable and probably discriminatory (Adelman, 1979; Sherry, 1979; Van Nagel, 1977; Webster, 1977). Teacher referrals remain the major source of identification although widely disparate definitions of learning disabilities are employed. Considerable disagreement has been found among special educators, psychologists, speech therapists, and parents regarding the major parameters of a learning disability (Alley, Deshler, and Millard,

1979). Though a multidisciplinary staff approach employs an attractive group decision making process, it is probably better employed as a program planning device than a method of identifying LD children. The tests administered and the information generated by the multidisciplinary team appear to be unrelated to reliable identification of learning disabilities (Thurlow and Ysseldyke, 1979). Effective assessment is the process of collecting data that can be reliably used in making educational decisions.

That learning disability eligibility must be based on an achievement-ability discrepancy is clear in the regulations of Public Law 94-142. It is also generally accepted by authorities in the field that an objective way of assessing this discrepancy is needed (Hanna, Dyck, and Holen, 1979).

Eligibility Screening

Myklebust (1972) proposed a ratio of actual achievement to expected achievement, expressed as a Learning Quotient (LQ), as a method of determining severity of learning disability. The formula for computation of the Learning Quotient is as follows:

$$LQ = \frac{\text{actual achievement level}}{\text{expected achievement level}}, \text{ where}$$

actual achievement is a grade equivalent score for any achievement test or subtest plus 5.2, and expected achievement level is the average of the following:

chronological age,
grade level plus 5.2,
and mental age.

Grade level is the actual grade placement of a student and mental age (MA) is that yielded by an intelligence test. Chronological age (CA) is incorporated because it reflects physiological maturity. Grade level is included as a quantitative indicator of experience, particularly with respect to opportunity for school learning. The constant value 5.2 (based

on school entry age), added to grade level, is a conversion factor which adjusts grade level to the same relative scale as MA and CA (Macy, Baker, and Kosinski, 1976). Myklebust suggested that an LQ cutoff value of 90 be used as one basis for classification of a learning disability.

Two major studies have been conducted on the use of the Myklebust formula: Macy, Baker, and Kosinski (1976) and the Skokie (IL) School District (1969). Macy, et al., found that learning quotient distributions differed among grade levels, subject areas and gender-by-ethnicity subgroups. They found that an IQ of 90 was needed to use the formula and that the inclusion of the grade equivalent scores created a limitation to the validity of the learning quotient. They indicated that variable criterion values (and cutoff scores) should be used to guarantee fair selection.

The Skokie study used a two-phase approach that employed group tests in phase one and an individually administered test (WISC) in phase two. They found the learning quotient to be an effective method to establish objective placement criterion. Variable cutoff scores were recommended based on the results of their study that included 93 for the first three months of grade two or below (many children experiencing learning problems could not arithmetically attain an 89 or less), 85 for grades two through six (89 resulted in the identification of many mild underachievers) and a continued monitoring of 86-89 scores in grades two through six (and difficulty in two academic areas) for continuing problems and possible future placement.

The use of a formula to identify the learning disabled is not without its critics (McLeod, 1979; Hanna, Dyck, and Holen, 1979). Such a method is fraught with statistical errors and errors of assumption and both studies indicate the need for considering additional criteria when classifying learning disabilities.

II. THE MACOMB STUDY

The Myklebust Learning Quotient Method of identifying learning disabilities was field tested (Swartz, 1980) to determine appropriateness and efficacy for use in the Macomb Community Unit School District. The study generated new data from instruments employed especially to test the formula and analyzed existing achievement data in relation to formula utility.

Subjects

All children in grades one through twelve diagnosed as learning disabled (N=163) were used in the study. Self-contained LD children (N=32) were matched by grade and sex to an equal group of resource LD children for group comparisons.

A random sample of regular students in grades one through eight (N=33) was selected for comparison to a random group of LD students (N=40) selected from the total LD population. Children used for the comparison of WISC scores constituted a sample of the whole (N=46), all LD children who had been administered the WISC in grades one through twelve.

Procedure

The procedure employed tests that can be administered by teachers in a relatively short period of time. The Kuhlmann-Anderson Test was used to generate mental age. This test was administered in small groups. Achievement level was measured by the Peabody Individual Achievement Test (PIAT). This test was administered individually to all children in the study. The PIAT

general information subtest was not used in calculating the formula because it should generally not be affected by a learning disability. Calculation of LQ was terminated for children who scored below 80 on the Kuhlmann-Anderson Test or for those whose behavior problems were affecting test administration and results. All LQ formula components using this data for LD students is listed in Table 7 of the Appendix and data for the regular student sample is listed in Table 8, also in the Appendix. A summary comparison of this data can be found in Table 9.

The SRA Achievement Series is administered each year to all students in the district for grades one through eight. In addition to achievement scores this test also generates an IQ equivalent score. The results of this testing are summarized in Table 10 in the Appendix. Learning Quotients were calculated using this data and the results are listed for a sample of LD students in Table 11 and for a sample of regular students in Table 12 in the Appendix.

Scores for the Weschler Intelligence Scale for Children (WISC) were not available for all LD students. Though no new data was generated during this study, existing data was collected to analyze test stability. Learning Quotients calculated using WISC scores are listed in Table 13.

Learning Quotients calculated for LD self-contained children and the matched sample of LD resource children are listed separately in Tables 14 and 15 of the Appendix.

Results

Learning Quotients calculated from the Kuhlmann-Anderson Test and the PIAT for LD and regular students are summarized in Table 1. Mean LQ's and standard deviations were calculated for primary, intermediate, and junior high levels. Decreases are noted for both groups as grade level increases.

Table 1

Learning Quotients of LD and Regular Students

	$\bar{X}$ LQ	SD
Primary LD	86.2	7.2
Primary Regular	100.7	8.5
Intermediate LD	83.4	8.4
Intermediate Regular	96.3	12.6
Junior High LD	76.9	7.8
Junior High Regular	86.3	13.9
All LD	83.2	8.5
All Regular	95.6	12.5

Learning Quotients calculated from SRA Achievement Series scores (using both achievement subtest scores and IQ equivalent scores) are summarized and compared to LQ's generated from the Kuhlmann-Anderson Test and the PIAT in Table 2. A t test was used to determine a significant difference between the distribution of means. The t values obtained were insignificant at the .01 level.

Table 2

Comparison of LQ's Using Kuhlmann-Anderson/PIAT Scores and SRA Scores

	Kuhlmann-Anderson PIAT-$\bar{X}$ LQ	SRA-$\bar{X}$ LQ	t Value	df
Primary LD	86.2	83.3	.92	62
Intermediate LD	83.4	83.2	.08	52
Junior High LD	76.9	70.0	1.78	34
All LD	83.2	79.5	2.61	153

Intelligence Quotients from the Kuhlmann-Anderson Test and the IQ equivalent scores from the SRA Achievement Series are listed in Table 3. A t test was used to determine a significant difference between the distribution

of means. The t values obtained for the Intermediate LD and all LD were significant at the .01 level.

Table 3

Comparison of IQ's Using Kuhlmann-Anderson Scores and SRA Scores

	Kuhlmann-Anderson $\bar{X}$ IQ	SRA-$\bar{X}$ IQ	t Value	df
Primary LD	96.1	93.5	.84	66
Intermediate LD	94.0	85.0	3.84*	57
Junior High LD	90.4	95.0	1.33	35
All LD	94.1	90.7	2.07*	162

*Significant .01

Learning Quotients calculated using Kuhlmann-Anderson scores and WISC scores (both using PIAT scores) are listed in Table 4. A t test was used to determine a significant difference between the distribution of means. The t values obtained were insignificant at the .01 level.

Table 4

Comparison of LQ's Using Kuhlmann-Anderson Scores and WISC Scores

	Kuhlmann-Anderson LQ	WISC LQ	t Value	df
Primary LD	83.4	85.0	.60	15
Intermediate LD	82.5	81.1	.44	26
Junior High LD	74.2	75.3	.34	24
Senior High LD	60.9	61.8	.29	18
All LD	76.2	75.3	.35	89

Intelligence Quotients from the Kuhlmann-Anderson Test and the WISC are listed in Table 5. A t test was used to determine a significant

difference between the distribution of means. The t values obtained are insignificant at the .01 level,

Table 5

Comparison of IQ's Using Kuhlmann-Anderson Scores and WISC Scores

	Kuhlmann-Anderson IQ	WISC IQ	t Value	df
Primary LD	91.8	86.0	1.26	16
Intermediate LD	91.1	94.0	1.45	26
Junior High LD	95.1	91.0	1.09	24
Senior High LD	96.7	90.0	1.79	18
All LD	91.0	93.3	1.35	90

Learning Quotients using Kuhlmann-Anderson and PIAT scores for self-contained LD and resource LD children are listed in Table 6. A t test was used to determine a significant difference between the distribution of means. The t value obtained was insignificant at the .01 level.

Table 6

Comparison of LQ's for Self-Contained and Resource LD Students

	$\bar{X}$ LQ	t Value	df
Self-Contained LD	75.0	1.60	62
Resource LD	79.6		

Discussion

The Macomb School District is presently providing special education to children labeled learning disabled numbering in excess of 6 percent of the total school population. This number is considered an overidentification

and appears to include an inordinate number of underachievers (see Table 7). Table 7 also indicates that a large number of children served have an intelligence quotient of one standard deviation below normal. This could be the result of teacher referral being the major method of LD identification. Children with lower abilities and below average achievement are more likely to be referred than children with higher than average abilities and near average achievement. However, an achievement-ability discrepancy will more likely be found in the second group. Applying the Myklebust formula and using a cutoff of 83 (one standard deviation from the regular student Learning Quotient mean, Table 1) would result in the identification of four percent of the school population as learning disabled. This number more closely approximates the theoretical incidence level. It was also judged that the low achievement of those children qualified using this cutoff was more clearly related to an identifiable learning disability. The use of an 83 cutoff score does present some problems when applied to grades 1 and 2. A theoretical child in grade 1 (MA=6.0 - CA=6.0) with no measurable achievement would obtain an LQ of 86. A theoretical child in grade 2 (MA=7.0 - CA=7.0) with achievement levels at 0, .5, and 1.0 would obtain an LQ of 74, 81, and 88, respectively. An adjustment of the cutoff value seems indicated for grades 1 and 2. A cutoff of one standard deviation below the mean regular primary achievement would generate a cutoff score of 92 (see Table 1). This score would continue to identify an inordinate number of underachievers. A 1.5 standard deviation represents an appropriate cutoff modification for grades 1 and 2 (LQ=88).

The theoretical use of the Myklebust formula would factor in grade level to grade twelve. Most learning disability program models take a decided shift in focus in the high school. Work in academic skill deficit areas is replaced by vocational training and the development of skills

necessary for productive citizenship after high school graduation. This shift in program content should be reflected in calculating the formula. Grade Age (GA) should not skew the calculation of Expected Achievement (EA) if a constant of 9.0 was entered. This would result in the following formula modification for high school students:

$$\frac{MA + CA + 9.0}{3} = EA$$

Because SRA Achievement Series scores are available for all children in the district, it represents an attractive source of potential screening data. Learning Quotients calculated using this data were not found to be significantly different than the LQ's generated using the Kuhlmann-Anderson Test and the PIAT (see Table 2). Though scores are not available for high school students (such achievement scores generally are not), they might be effectively used as a first level eligibility screening. The IQ equivalent score generated by the SRA was not found to be stable (see Table 3). SRA achievement subtest data could be used, however, if the score from the Kuhlmann-Anderson Test was substituted for the SRA IQ equivalent score when calculating the formula.

There is some criticism of using a paper and pencil, group administered test like the Kuhlmann-Anderson to generate an accurate measure of cognitive abilities. A comparison of LQ's using the Kuhlmann-Anderson and the WISC found no significant difference (see Table 4). A comparison of the IQ scores generated by both tests also yielded no significant difference (see Table 5). Though the Kuhlmann-Anderson Test is not being recommended as a substitute for the individually administered WISC, the score is sufficiently stable when calculating this formula to be used with confidence.

Though certainly various criteria are used to determine program placement, there is an implicit assumption that the placement of learning disabled students in a self-contained classroom (more restrictive) rather

than a resource classroom (less restrictive) would be to some extent based on severity of learning disability. This was not found to be the case in this study (see Table 6). Criteria used in addition to the Learning Quotient for program placement decisions should clearly be delineated to insure that such placements are not arbitrary and capricious but rather based on objective data or judgement criteria.

If the Myklebust formula is to be used as a method of determining eligibility for learning disability programs, some cautions appear in order. It cannot be overemphasized that the tests used in this process are designed to quantify the achievement-ability discrepancy only. They are not an effective substitute for a battery of tests used in the diagnostic-prescriptive process to pinpoint specific learning disabilities and develop instructional strategies to remediate these deficits. Screening for eligibility must be followed by appropriate diagnostic-prescriptive methods.

Some of the data in this study suggests that lower ability children are the major population being served in learning disability programs. If this is true, it is the result of an error in our conceptualization of the parameters of learning disabilities. Achievement relative to grade level is an unimportant notion in our consideration of who is learning disabled. A very bright child (1.0 to 1.5 SD above normal) should also be expected to achieve at that level. Likewise, a below normal ability child would be expected to achieve at that level. How closely a child's achievement approximates grade level is an inadequate yardstick of child or program success. The availability of district-wide achievement data and a measure of ability level would be a valuable asset as a first level screening for learning disability. This would be an important addition to teacher referral as a method of identifying learning disabled students.

The process described in this study can for the most part be accomplished by special education teachers or others familiar with the

testing instruments. Only children failing to respond appropriately to the testing instruments need be referred to the school psychologist. This is not an attempt to exclude the psychologist as an important member of the LD team. It is rather intended to maximize the use of resources and personnel. If this screening process provides more time for in-depth work with LD children by the school psychologist, then it would be a worthy end. School psychologists who do, however, maintain an active role in qualifying children for LD service might want to consider the application of this formula to the results of their own testing. Clinical judgement would be greatly supplemented if an objective measure of LD eligibility and severity was used.

III. GUIDELINES FOR LEARNING DISABILITY ELIGIBILITY SCREENING

Directions

All LD referrals will be screened using the eligibility formula. Screening steps include the following:

1. Obtain written parent permission for test administration and LD screening.
2. The Kuhlmann-Anderson Test should be administered to all referrals. This should be done in strict accordance with the procedures outlined in the test manual. Children who score 79 and below or who cannot complete the test for any reason should be referred to the school psychologist.
3. a. Grades 1-2. The lowest SRA subtest should be used to calculate the LQ. Enter grade when the SRA was administered for number 2 on the attached form (Form 1). The referral is terminated for Learning Quotients of 89 or higher. Children with Learning Quotients of 88 or below should be administered the PIAT. Do not use the General Information subtest when calculating the formula. Children with Learning Quotients of 88 or below using these tests are determined eligible for LD service.

   b. Grades 3-8. The lowest SRA subtest should be used to calculate the LQ. Enter grade when the SRA was administered for number 2 on the attached form (Form 1).

The referral is terminated for Learning Quotients of 84 or higher. Children with Learning Quotients of 83 or below should be administered the PIAT. Do not use the PIAT General Information subtest when calculating the formula. Children with Learning Quotients of 83 or below using these tests are determined eligible for LD service.

c. High School. Administer the PIAT to all referrals that have completed the Kuhlmann-Anderson Test. Do not use the PIAT General Information subtest when calculating the formula. Use Form 2 for all high school referrals. Children with Learning Quotients of 83 or below are determined eligible for LD service.

4. Teacher administered diagnostic testing and needed psychological testing should be completed at this time.

5. Convene the multidisciplinary staff conference.

LD ELIGIBILITY SCREENING

Form 1 - Elementary and Junior High

Name_____ Age (CA)_____ Grade_____

1. Kuhlmann-Anderson (Form ____) _____ X CA_____
   ——————————————————— = MA __.__
   100

2. Grade_____.______ + 5.2 = GA (Grade age) _____.______

3. MA __.___ + CA __.___ + GA __.___
   ——————————————————— = __.___ EA (expectancy age)
   3

4. Achievement Test (lowest subtest) __.___ + 5.2 = __.___ AA (achievement age)

   subtest used_____

5. AA __.___
   ——————— = __.___ X 100 = LQ (learning quotient) _____
   EA __.___

Other test data_____

_____

_____

_____

Referred by_____

_____ _____
Date LD Teacher

LD ELIGIBILITY SCREENING

Form 2 - High School

Name_____ Age (CA)_____ Grade_____

1. Kuhlmann-Anderson (Form ____) _____ X CA_____ = MA __.__
   100

2. MA __.__ + CA __.__ + 9.0 = __.__ EA (expectancy age)
   3

3. Achievement Test (lowest subtest) __.__ + 5.2 = __.__ AA (achievement age)

   subtest used_____

4. AA __.__ = __.__ X 100 = LQ (learning quotient) _____
   EA __.__

Other test data_____

_____

_____

_____

Referred by_____

_____ _____
Date LD Teacher

APPENDIX

TABLE 7. FORMULA COMPONENTS--LD STUDENTS (N=163)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
1	97	6.0	5.8	1.0	6.2	6.0	Spelling	.7	5.9	98
2	107	7.4	7.8	1.0	6.2	7.1	Spelling	1.7	6.9	97
3	122	6.3	7.7	1.4	6.6	6.9	Rdg. rec./ Spelling	1.4	6.6	96
4	95	6.8	6.5	1.2	6.4	6.6	Spelling	1.0	6.2	94
5	103	6.8	7.0	1.9	7.1	7.0	Math.	1.1	6.3	90
6	89	6.1	5.4	1.0	6.2	5.9	Rdg. comp.	0	5.2	88
7	94	6.3	5.9	1.0	6.2	6.1	Rdg. comp.	0	5.2	85
8	103	6.9	7.1	1.0	6.2	6.1	Rdg. rec.	.5	5.7	85
9	90	8.3	7.5	1.5	6.7	7.5	Math.	1.1	6.3	84
10	86	6.8	5.8	1.0	6.2	6.2	Rdg. comp.	0	5.2	83
11	113	7.3	8.2	1.4	6.6	7.4	Math.	.6	5.8	78
12	91	7.3	6.6	1.0	6.2	6.7	Rdg. comp.	0	5.2	77
13	93	7.2	6.7	1.5	6.7	6.9	Math.	.1	5.3	77
14	96	7.2	6.9	1.2	6.4	6.8	Rdg. comp.	0	5.2	76
15	96	6.1	5.9	2.2	7.4	6.5	Spelling	1.4	6.6	102
16	103	7.1	7.3	2.2	7.4	7.3	Spelling	1.7	6.9	96
17	95	8.2	7.8	2.2	7.4	7.8	Math./Rdg.	2.0	7.2	92
18	98	8.1	7.9	2.1	7.3	7.8	Rdg. rec./ comp.	2.0	7.2	92
19	102	7.4	7.5	2.0	7.2	7.4	Rdg. rec.	1.6	6.8	92
20	83	7.8	6.5	2.9	8.1	7.5	Rdg. rec.	1.6	6.8	91
21	86	8.2	7.1	2.0	7.2	7.5	Rdg. rec.	1.5	6.7	89
22	107	7.9	8.4	2.3	7.5	7.9	Math.	1.9	7.1	89
23	103	7.8	8.0	2.0	7.2	7.7	Rdg. rec.	1.6	6.8	88

TABLE 7. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
24	90	8.1	7.2	2.0	7.2	7.5	Rdg. rec.	1.4	6.6	88
25	99	8.3	8.2	2.0	7.2	7.9	Spelling	1.7	6.9	87
26	93	8.3	7.7	2.0	7.2	7.7	Rdg. rec.	1.5	6.7	87
27	99	8.2	8.1	2.0	7.2	7.8	Math.	1.5	6.7	86
28	104	7.6	7.9	2.2	7.4	7.6	Math.	1.1	6.3	83
29	91	8.7	7.9	2.9	8.1	8.2	Spelling	1.6	6.8	83
30	110	8.0	8.8	2.3	7.5	8.1	Math.	1.4	6.6	81
31	117	7.3	8.5	2.2	7.4	7.7	Rdg. comp.	0	5.2	68
32	100	7.1	7.1	3.0	8.2	7.4	Math.	2.1	7.3	98
33	87	9.2	8.0	3.2	8.4	8.5	Math./Sp.	2.9	8.1	95
34	95	8.4	7.9	3.0	8.2	8.1	Math.	2.5	7.7	95
35	98	8.3	8.1	3.2	8.4	8.3	Rdg. comp.	2.4	7.6	92
36	94	8.1	7.6	3.0	8.2	7.9	Rdg. rec.	2.0	7.2	91
37	107	8.1	8.7	3.0	8.2	8.3	Rdg. rec.	2.2	7.4	89
38	99	9.1	9.1	3.0	8.2	8.8	Rdg. comp.	2.7	7.9	89
39	100	11.1	11.1	3.7	8.9	10.4	Rdg. comp./ Spelling	4.1	9.3	89
40	98	8.6	8.4	3.0	8.2	8.4	Rdg. rec.	2.2	7.4	88
41	80	9.3	7.4	3.2	8.4	8.4	Rdg. rec.	2.2	7.4	88
42	87	9.0	7.8	3.0	8.2	8.3	Spelling	1.8	7.0	84
43	90	10.4	9.4	3.9	9.1	9.6	Spelling	2.8	8.0	83
44	91	9.6	8.7	3.0	8.2	8.8	Rdg. rec.	2.0	7.2	82
45	92	8.9	8.2	3.0	8.2	8.4	Spelling	1.6	6.8	81
46	93	8.4	7.9	3.2	8.4	8.2	Rdg. rec.	1.4	6.6	80

TABLE 7. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
47	86	9.0	7.7	3.2	8.4	8.4	Math.	1.5	6.7	80
48	93	8.3	7.8	3.2	8.4	8.2	Rdg. rec.	1.3	6.5	79
49	80	10.2	8.2	3.2	8.4	8.9	Math.	1.9	7.1	79
50	99	8.6	8.5	3.0	8.2	8.4	Math.	1.5	6.7	79
51	93	9.2	8.6	3.0	8.2	8.7	Rdg. rec.	1.6	6.8	78
52	89	9.9	8.8	3.0	8.2	8.7	Rdg. rec.	1.5	6.7	77
53	87	9.1	7.9	3.0	8.2	8.4	Rdg. comp.	1.5	6.7	71
Primary										
X	96.1	8.1	7.7			7.7		1.5	6.7	86.2
SD	8.7	1.1	1.0			0.9		0.8	0.8	7.2
54	87	9.1	7.9	4.2	9.4	8.8	Spelling	3.4	8.6	98
55	90	9.1	8.2	4.1	9.3	8.8	Spelling	2.9	8.1	92
56	109	9.8	10.6	4.0	9.2	9.9	Spelling	3.6	8.8	89
57	92	9.8	9.0	4.9	10.1	9.6	Math.	3.3	8.5	89
58	80	9.4	7.5	4.2	9.4	8.8	Math.	2.5	7.7	88
59	100	9.6	9.6	4.0	9.2	9.5	Math.	3.2	8.4	88
60	93	9.4	8.7	4.2	9.4	9.2	Spelling	2.9	8.1	88
61	93	9.3	8.6	4.0	9.2	9.0	Math.	2.6	7.8	87
62	86	9.9	8.5	4.0	9.2	8.9	Math.	2.4	7.6	85
63	104	9.5	9.8	4.0	9.2	9.5	Spelling	2.8	8.0	84
64	86	10.3	8.9	4.2	9.4	9.5	Rdg. comp.	2.4	7.6	84
65	103	9.6	9.9	4.0	9.2	9.6	Rdg. rec.	2.4	7.6	77

TABLE 7. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
66	82	9.1	7.5	4.2	9.4	8.7	Math.	1.5	6.7	77
67	89	10.4	9.2	4.2	9.4	9.7	Spelling	1.6	6.8	70
68	97	10.1	9.8	5.0	10.2	10.0	Math.	4.4	9.6	96
69	92	10.3	9.4	5.0	10.2	9.9	Spelling	4.1	9.3	93
70	95	10.2	9.7	5.0	10.2	10.0	Rdg. rec.	3.3	8.5	85
71	108	10.9	11.7	5.0	10.2	10.9	Rdg. rec.	3.9	9.1	83
72	102	10.3	10.5	5.0	10.2	10.3	Rdg. rec.	4.0	9.2	89
73	95	11.0	10.5	5.0	10.2	10.5	Spelling	2.4	7.6	72
74	87	11.1	9.7	6.2	11.4	10.7	Math.	6.2	11.4	107
75	94	11.3	10.6	6.0	11.2	11.0	Math.	5.3	10.5	96
76	105	12.0	12.6	6.2	11.4	12.0	Rdg. rec.	6.0	11.2	93
77	90	12.1	10.9	6.8	11.1	11.4	Math.	5.3	10.5	92
78	90	11.7	10.5	6.2	11.4	11.2	Spelling	4.6	9.8	88
79	90	11.7	10.5	6.2	11.4	11.2	Spelling	4.4	9.6	86
80	94	11.8	11.1	6.2	11.4	11.4	Math.	4.6	9.8	86
81	84	12.2	10.2	6.0	11.2	11.2	Spelling	4.1	9.3	83
82	99	11.8	11.7	6.2	11.4	11.6	Rdg. rec.	4.2	9.4	81
83	95	11.9	11.3	6.2	11.4	11.5	Spelling	3.9	9.1	79
84	91	11.3	10.3	6.2	11.4	11.0	Rdg. comp.	3.5	8.7	79
85	92	11.2	10.3	6.2	11.4	11.0	Spelling	3.4	8.6	78
86	92	11.6	10.7	6.0	11.2	11.2	Math./Sp.	3.5	8.7	78
87	87	11.6	10.6	6.2	11.4	11.2	Math.	3.5	8.7	78
88	94	12.3	11.6	6.2	11.4	11.8	Rdg. rec.	4.0	9.2	78
89	96	13.7	13.2	6.9	11.1	12.7	Spelling	4.6	9.8	77

TABLE 7. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
90	93	11.3	10.5	6.0	11.2	11.0	Spelling	3.3	8.5	77
91	95	11.6	11.0	6.2	11.4	11.3	Spelling	3.4	8.6	76
92	107	11.7	12.5	6.0	11.2	11.8	Spelling	3.4	8.6	72
93	98	11.6	11.3	6.0	11.2	11.4	Rdg. rec.	3.0	8.2	71
94	92	11.6	10.7	6.0	11.2	11.2	Spelling	3.6	8.8	79
95	107	11.5	12.3	6.3	11.5	11.7	Spelling	3.0	8.2	70
96	88	12.8	11.2	6.2	11.4	11.8	Rdg. comp.	3.1	8.3	70
Intermediate										
X	94.0	10.9	10.3			10.5		3.6	8.8	83.4
SD	7.1	1.1	1.3			1.1		1.0	1.0	8.4
97	88	12.9	11.4	7.2	12.4	12.2	Rdg. rec.	5.6	10.8	89
98	88	11.5	10.1	7.1	11.1	10.9	Rdg. rec.	4.0	9.2	84
99	85	13.0	11.1	7.1	12.3	12.1	Math.	4.9	10.1	83
100	99	12.1	12.0	7.2	12.4	12.2	Spelling	4.1	9.3	76
101	82	12.1	9.9	7.1	12.3	11.4	Spelling	3.2	8.4	74
102	88	11.3	11.4	7.2	12.4	12.3	Rdg. rec.	3.9	9.1	74
103	100	12.1	12.1	7.1	12.3	12.2	Spelling	3.5	8.7	71
104	84	12.5	10.5	7.1	12.3	11.8	Rdg. comp.	3.1	8.3	70
105	84	12.8	10.8	7.1	12.3	12.0	Rdg. comp.	2.6	7.8	65
106	89	13.4	12.0	8.2	13.4	12.9	Spelling	6.2	11.4	88
107	80	13.2	10.6	8.1	13.3	12.3	Rdg. rec.	5.6	10.8	87
108	88	12.1	10.7	8.1	13.3	12.0	Rdg. rec.	5.2	10.4	87

TABLE 7. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
109	88	13.1	11.5	8.2	13.4	12.7	Math.	5.7	10.9	86
110	83	14.6	12.1	8.2	13.4	13.4	Rdg. comp.	6.0	11.2	84
111	87	13.1	11.4	8.1	13.3	12.9	Spelling	5.6	10.8	84
112	93	13.0	12.1	8.1	13.3	12.8	Rdg. comp.	5.5	10.7	84
113	90	13.7	12.3	8.1	13.3	13.1	Rdg. comp.	5.0	10.2	78
114	99	13.2	13.1	8.1	13.3	13.2	Rdg. rec.	4.8	10.0	76
115	85	14.7	12.5	8.1	13.3	13.5	Spelling	4.9	10.1	75
116	117	13.3	15.6	8.2	13.4	14.1	Spelling	5.6	10.8	77
117	95	14.0	13.3	8.2	13.4	13.6	Rdg. rec.	5.8	10.1	74
118	87	12.9	11.2	8.2	13.4	12.5	Spelling	3.9	9.1	73
119	89	13.3	11.8	8.2	13.4	12.8	Rdg. rec.	3.9	9.1	71
120	88	13.8	12.1	8.1	13.3	13.0	Spelling	3.9	9.1	70
121	101	14.1	14.2	8.2	13.4	13.9	Spelling	4.1	9.3	67
122	100	13.5	13.5	8.1	13.3	13.4	Spelling	3.8	9.0	67
123	85	13.6	11.6	8.1	13.3	12.9	Rdg. comp./ Spelling	2.8	8.0	62
Junior High										
X	90.4	13.1	11.9			12.7		4.6	9.7	76.9
SD	8.0	0.8	1.3			0.8		1.1	1.0	7.8
Primary, Intermediate, Junior High Total										
X	94.1									83.2
SD	8.2									8.5

TABLE 7. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
124	92	14.9	13.7	9.5	14.7	14.4	Math.	6.7	11.9	83
125	88	15.6	13.7	9.5	14.7	14.6	Rdg. rec.	5.8	11.0	75
126	102	14.3	14.5	9.1	14.3	14.3	Rdg. rec.	5.4	10.6	74
127	94	14.0	13.1	9.1	14.3	13.9	Math.	4.9	10.1	73
128	89	14.7	13.0	9.5	14.7	14.1	Rdg. comp.	5.0	10.2	72
129	82	14.7	12.0	9.1	14.3	13.7	Spelling	3.7	8.9	65
130	89	14.4	12.8	9.5	14.7	13.9	Spelling	3.9	9.1	65
131	87	15.7	13.6	9.5	14.7	14.6	Math.	3.8	9.0	61
132	93	16.3	15.1	9.5	14.7	15.3	Spelling	4.1	9.3	60
133	82	14.1	11.5	9.6	14.8	13.4	Rdg. rec.	3.3	8.5	59
134	98	15.3	14.9	9.5	14.7	14.9	Rdg. rec.	3.6	8.8	59
135	99	14.0	13.8	9.1	14.3	14.0	Spelling	3.8	8.1	58
136	90	14.3	12.8	9.1	14.3	13.8	Spelling	3.9	8.1	58
137	89	15.2	13.5	9.1	14.3	14.3	Spelling	3.9	8.1	56
138	89	16.0	14.2	9.1	14.3	14.9	Spelling	3.9	8.1	54
139	91	15.9	14.4	10.5	15.7	15.3	Math.	8.2	13.4	87
140	80	14.5	11.6	10.2	15.4	13.8	Rdg. rec.	5.5	10.5	77
141	88	15.0	11.2	10.1	15.3	14.5	Rdg. comp.	6.0	11.2	77
142	95	15.9	15.1	10.5	15.7	15.5	Math.	6.4	11.6	74
143	93	14.1	13.1	10.1	15.3	14.5	Spelling	5.3	10.5	72
144	91	15.3	13.9	10.2	15.4	14.8	Rdg. rec.	5.2	10.4	70
145	82	15.3	12.5	10.2	15.4	14.4	Math.	4.9	10.1	70
146	86	14.1	12.1	10.2	15.4	13.8	Rdg. rec.	4.5	9.7	70
147	82	16.4	13.4	10.2	15.4	15.0	Rdg. comp.	4.5	9.7	65

TABLE 7. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
148	95	14.5	13.7	10.2	15.8	14.5	Math.	4.2	9.4	64
149	93	15.4	14.3	10.1	15.3	14.1	Rdg. rec.	4.8	9.1	64
150	83	15.2	12.6	10.2	15.4	14.4	Math.	3.8	9.0	62
151	81	15.8	12.7	10.2	15.4	14.6	Spelling	3.6	8.8	60
152	83	16.3	13.5	10.5	15.7	13.4	Rdg. comp.	2.9	8.1	60
153	87	16.9	14.7	10.5	15.7	15.7	Rdg. comp.	4.2	9.4	59
154	82	17.2	14.1	11.1	16.3	15.1	Rdg. rec.	5.2	10.4	69
155	82	16.8	13.7	11.1	16.3	15.6	Math.	4.4	9.6	62
156	92	15.1	13.9	11.1	16.3	15.3	Spelling	4.2	9.4	61
157	95	16.8	15.9	11.1	16.3	16.3	Rdg. comp.	3.9	9.1	55
158	81	18.0	14.5	11.5	16.7	16.4	Rdg. comp.	3.9	9.1	55
159	85	17.1	14.5	11.1	16.3	16.0	Spelling	3.8	8.1	50
160	82	18.6	15.2	12.2	17.5	17.1	Rdg. rec.	5.8	11.0	64
161	88	17.1	15.0	12.5	17.7	16.6	Rdg. comp.	5.3	10.5	63
162	81	17.5	14.1	12.2	17.4	16.3	Math.	4.9	10.2	62
163	87	17.8	15.4	12.1	17.3	16.9	Spelling	3.9	9.1	54
164	95	18.5	17.5	12.5	17.7	17.9	Spelling	4.6	9.8	54
High School										
X	88.4	15.7	13.8			14.9		4.6	9.7	64.7
SD	5.7	1.3	1.3			1.1		1.0	1.2	8.4
All Total										
X	92.7									78.6
SD	8.0									11.7

TABLE 8. FORMULA COMPONENTS - REGULAR STUDENT SAMPLE (N=33)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
1	99	6.9	6.8	1.9	7.1	6.9	Spelling	2.3	7.5	108
2	99	7.3	7.2	1.9	7.1	7.2	Math.	2.1	7.3	101
3	126	7.3	9.2	1.9	7.1	7.9	Rdg. comp.	2.7	7.9	100
4	126	7.3	9.2	1.9	7.1	7.9	Spelling	2.3	7.5	95
5	106	7.4	7.8	1.9	7.1	7.4	Math.	1.5	6.7	91
6	128	6.8	8.7	1.9	8.1	7.9	Rdg. rec.	1.6	6.8	86
7	140	8.2	11.5	2.9	8.1	9.3	Rdg. comp./ Spelling	5.3	10.5	113
8	103	8.2	8.4	2.9	8.1	8.2	Spelling	3.9	9.1	111
9	137	7.5	10.3	2.9	8.1	8.6	Spelling	3.8	9.0	104
10	124	8.1	10.0	2.9	8.1	8.7	Math./Sp.	3.8	9.0	103
11	110	9.3	10.2	3.9	9.1	9.5	Math.	5.3	10.5	110
12	94	9.7	9.1	3.9	9.1	9.3	Spelling	3.5	8.7	94
13	98	9.0	8.8	3.9	9.1	9.0	Math.	3.2	8.4	93
rimary										
X	114	7.9	9.0			8.3		3.2	8.4	100.7
SD	16.0	0.9	1.3			0.8		1.2	1.2	8.5
14	148	9.1	13.5	4.9	10.1	10.9	Rdg. rec.	9.1	14.3	131
15	116	10.3	11.9	4.9	10.1	10.8	Spelling	6.0	11.2	104
16	104	9.8	10.2	4.9	10.1	10.0	Spelling	4.2	9.4	94
17	110	9.8	10.8	4.9	10.1	10.2	Spelling	4.1	9.3	91
18	132	10.3	13.6	4.9	10.1	11.3	Spelling	4.9	10.1	89
19	120	10.3	12.4	4.9	10.1	10.9	Rdg. rec.	4.2	9.4	86
20	118	10.6	12.5	5.9	11.1	11.4	Rdg. comp.	5.8	11.0	96

TABLE 8. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
21	116	11.5	13.3	5.9	11.1	12.0	Spelling	7.4	12.6	105
22	115	11.4	13.1	5.9	11.1	11.9	Math.	5.7	10.9	9[illegible]
23	120	12.3	14.8	6.9	12.1	13.1	Spelling	7.1	12.3	94
24	92	13.3	12.2	6.9	12.1	12.5	Math.	6.0	11.2	90
25	100	11.8	11.8	6.9	12.1	11.9	Rdg. rec.	4.8	10.0	84
Intermediate										
X	115.9	10.9	12.5			11.4		5.8	11.0	96.3
SD	14.6	1.2	1.3			0.9		1.5	1.5	12.6
26	120	13.3	16.0	7.9	13.1	14.1	Spelling	6.5	11.7	83
27	93	13.6	12.6	7.8	13.0	13.1	Spelling	5.2	10.4	79
28	122	13.2	16.1	7.9	13.1	14.1	Spelling	5.3	10.5	74
29	125	14.0	17.5	8.9	14.1	15.2	Rdg. comp.	12.8	18.0	118
30	116	13.5	15.7	8.9	14.1	14.4	Rdg. rec.	7.9	13.1	91
31	94	13.8	13.0	8.9	14.1	13.6	Spelling	6.5	11.7	86
32	100	13.8	13.8	8.9	14.1	13.9	Rdg. comp.	6.2	11.4	82
33	115	13.8	15.9	8.9	14.1	14.6	Spelling	6.0	11.2	77
Junior High										
X	110.6	13.6	15.1			14.1		7.1	12.3	86.3
SD	12.9	0.3	1.7			0.6		2.5	2.5	13.9
Total Group										
X	114.4									95.6
SD	14.3									12.5

TABLE 9. COMPARISON OF IQ AND LQ OF REGULAR AND LD STUDENTS

	X IQ	SD	X LQ	SD
Primary LD	96.1	8.7	86.2	7.2
Primary Regular	114.0	16.0	100.7	8.5
Intermediate LD	94.0	7.1	83.4	8.4
Intermediate Regular	115.9	14.6	96.3	12.6
Junior High LD	90.4	8.0	76.9	7.8
Junior High Regular	110.6	12.9	86.3	13.9
All LD	94.1	8.2	83.2	8.5
All Regular	114.4	14.3	95.6	12.5

TABLE 10. SRA ACHIEVEMENT TEST - MEAN AND RANGE OF GRADE EQUIVALENT SCORES

	Composite		Reading		Mathematics		Language Arts		IQ Equivalent Scores (SD=16)	
Grade	X	Range	X	Range	X	Range	X	Range	X	Range
1	2.1	0.1- 6.2	2.0	0.1- 6.1	2.3	0.1- 4.6	---	---	111	69-141
2	3.3	0.7- 6.9	3.3	0.5- 6.1	3.2	0.3- 6.8	3.0	0.1- 6.8	106	75-145
3	4.3	1.6- 8.7	4.2	0.9-10.7	4.3	1.8- 8.7	4.4	0.6-10.8	106	67-145
4	5.8	1.7-11.1	5.7	1.2-12.9	5.3	1.5-10.0	6.1	0.1-12.6	109	68-145
5	7.1	2.8-12.5	6.7	1.8-12.9	6.7	3.6-11.3	7.7	1.7-12.9	110	68-136
6	8.4	2.8-12.9	8.3	2.0-12.9	8.3	2.3-12.9	8.7	0.1-12.9	112	66-139
7	9.3	2.4-12.9	9.3	1.8-12.9	9.0	3.5-12.9	9.1	3.4-12.9	111	65-138
8	10.9	2.8-12.9	10.7	1.8-12.9	11.8	4.8-12.9	10.8	1.4-12.9	111	69-137

TABLE 11. FORMULA COMPONENTS - MEAN IQ AND LQ USING SRA DATA - LD STUDENTS

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
1	96	6.8	6.5	1.8	7.0	6.8	Reading	1.0	6.2	91
3	120	6.7	8.0	1.8	7.0	7.2	Reading	2.7	7.4	103
5	120	6.6	7.9	1.8	7.0	7.2	Reading	3.5	8.7	121
9	96	8.6	8.3	1.8	7.0	8.0	Reading	.8	6.0	75
13	81	7.1	5.8	1.8	7.0	6.6	Reading	.4	5.6	85
17	83	8.8	7.3	2.8	8.0	8.0	L.A.	.9	6.1	76
19	97	8.0	7.8	2.8	8.0	7.9	L.A.	1.1	6.3	80
21	70	8.1		2.8	8.0		L.A.	.8	6.0	
22	113	8.7	9.8	2.8	8.0	8.8	Math.	2.7	7.4	84
23	89	8.6	7.7	2.8	8.0	8.1	L.A.	.5	5.7	71
32	86	8.7	7.5	3.8	9.0	8.4	Math.	1.9	7.0	83
33	79	9.8		3.8	9.0		L.A.	3.1	8.3	
34	76	9.0		3.8	9.0		Reading	3.1	8.3	
36	84	9.6	8.1	3.3	9.0	8.9	L.A.	.6	5.8	65
40	112	9.2	10.3	3.8	9.0	9.5	Reading	1.1	6.3	66
Primary										
X	93.5									83.3
SD	16.2									15.9
58	65	9.1		4.8	10.0		L.A.	.1		
59	84	10.2	8.6	4.8	10.0	9.6	Math.	4.4	9.6	100
63	81	10.1	8.2	4.8	10.0	9.4	Reading	2.9	8.0	85
65	68	10.2		4.8	10.0		Reading	2.2	7.4	
66	94	10.4	9.8	4.8	10.0	10.0	Reading	4.3	9.5	95

TABLE 11. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
68	99	10.9	10.8	5.8	11.0	10.9	L.A.	4.3	9.5	87
69	88	10.1	8.9	5.8	11.0	10.[illegible]	Math.	5.2	10.4	104
70	94	10.1	9.5	5.8	11.0	10.2	L.A.	3.9	9.0	88
71	77	11.5		5.8	11.0		Reading	2.7	7.9	
73	87	11.8	10.3	5.8	11.0	11.0	Reading	2.5	7.7	70
74	68	12.5		6.8	12.0		Rdg./L.A.	3.5	8.7	
76	102	12.6	12.9	6.8	12.0	12.5	L.A.	4.0	9.2	74
82	88	12.2	10.7	6.8	12.0	11.6	Reading	4.1	9.3	80
80	90	12.2	11.0	6.8	12.0	11.7	Reading	2.0	7.2	62
86	80	12.3	9.8	6.8	12.0	11.4	L.A.	2.8	8.0	70
Intermediate										
X	85.0									83.2
SD	10.5									13.4
97	93	13.3	12.4	7.8	13.0	12.9	L.A.	3.2	8.4	65
98	84	13.6	11.4	7.8	13.0	12.7	Reading	1.7	6.9	54
100	108	12.7	13.7	7.8	13.0	13.1	L.A.	5.5	10.7	82
101	86	13.5	11.6	7.8	13.0	12.7	L.A.	3.0	8.2	65
104	79	13.0		7.8	13.0		Reading	2.1	7.3	
106	98	13.1	12.8	8.8	14.0	13.3	Reading	7.3	10.5	79
110	91	15.0	13.7	8.8	14.0	14.2	L.A.	1.4	6.6	46
116	116	13.9	16.1	8.8	14.0	14.7	Math.	8.5	13.7	93

TABLE 11. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
117	87	14.8	12.9	8.8	14.0	13.9	L.A.	6.4	11.6	83
118	108	13.3	14.4	8.8	14.0	13.9	L.A.	3.6	8.8	63
Junior High										
X	95.0									70.0
SD	12.2									15.2
All										
X	90.7									79.5
SD	13.7									15.6

TABLE 12. FORMULA COMPONENTS - MEAN IQ AND LQ USING SRA DATA - REGULAR STUDENTS

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
1	104	6.8	7.1	1.8	7.0	7.0	Rdg./Math.	2.6	7.8	111
2	90	7.2	6.5	1.8	7.0	6.9	Rdg.	6.3	6.3	91
3	116	7.2	8.4	1.8	7.0	7.5	Math.	3.8	9.0	120
4	110	7.2	8.4	1.8	7.0	7.5	Math.	2.8	8.0	107
5	90	7.3	6.6	1.8	7.0	7.0	Rdg.	1.5	6.7	95
6	110	6.7	7.4	1.8	7.0	7.0	Rdg.	2.2	7.4	106
7	99	8.1	8.0	2.8	8.0	8.0	Rdg.	4.3	9.5	119
8	108	8.1	8.8	2.8	8.0	8.3	Math.	3.1	8.3	100
9	129	7.4	9.5	2.8	8.0	8.3	L.A.	4.7	9.9	119
10	108	8.0	8.6	2.8	8.0	8.2	Math.	3.8	9.0	109
11	112	9.2	10.3	3.8	9.0	9.5	Math.	5.5	10.7	112
12	99	9.6	9.5	3.8	9.0	9.4	L.A.	3.1	8.3	88
13	112	8.1	9.1	3.8	9.0	8.7	Rdg.	3.1	8.3	95
Primary										
X	106.7									105.5
SD	10.6									10.9
14	No scores									
15	132	10.2	13.5	4.8	10.0	11.2	Math.	5.6	10.8	96
16	103	9.7	10.0	4.8	10.0	9.9	Math.	5.5	10.7	108
17	105	9.7	9.5	4.8	10.0	9.7	L.A.	4.3	9.5	97
18	132	10.2	13.4	4.8	10.0	11.2	Math.	7.0	12.2	108
19	121	10.2	12.3	4.8	10.0	10.8	L.A.	3.9	9.1	84
20	97	10.3	10.2	5.8	11.0	10.6	Rdg.	7.2	12.4	116

TABLE 12. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
21	101	11.4	11.5	5.8	11.0	11.3	Math.	7.6	12.8	113
22	99	11.3	11.1	5.8	11.0	11.2	Rdg.	6.5	11.7	104
23	112	12.2	13.7	6.8	12.0	12.6	Math.	8.8	14.0	111
24	118	13.2	15.5	6.8	12.0	13.6	L.A.	6.8	12.0	88
25	103	11.7	12.0	6.8	12.0	11.9	Rdg.	2.9	8.1	68
Intermediate										
X	111.2									99.4
SD	12.8									14.6
26	125	13.2	16.5	7.8	13.0	14.2	L.A.	10.7	15.9	111
27	No scores									
28	128	13.1	16.8	7.8	13.0	14.3	L.A.	11.6	16.8	117
29	130	13.1	17.0	8.8	14.0	14.7	Rdg./Math./ L.A.	12.9	18.1	123
30	114	13.4	15.3	8.8	14.0	14.2	Rdg.	9.1	14.3	100
31	103	13.7	14.1	8.8	14.0	13.9	Math.	8.5	13.7	98
32	112	13.7	15.3	8.8	14.0	14.3	Rdg.	11.1	16.3	114
33	102	13.7	14.0	8.8	14.0	13.9	Rdg.	9.3	14.5	104
Junior High										
X	116.3									109.6
SD	11.6									9.3
All										
X	110.5									104.3
SD	11.9									12.3

TABLE 13. FORMULA COMPONENTS - MEAN IQ AND LQ USING WISC

Subject No.	Grade	WISC IQ Score	LQ
26	2.0	87	88
27	2.0	101	85
28	2.2	90	86
33	3.0	83	96
44	3.0	102	78
46	3.0	89	81
47	3.0	81	82
48	3.0	77	84
49	3.2	64	--
Primary			
X		86.0	85.0
SD		11.8	5.4
54	4.0	98	95
58	4.2	101	82
60	4.0	89	89
67	4.0	86	71
75	6.0	99	96
78	6.2	98	85
79	6.2	88	82
82	6.2	96	82
85	6.2	87	76
86	6.0	89	79
87	6.0	96	76
90	6.0	98	76
93	6.0	102	68
94	6.0	89	79
Intermediate			
X		94.0	81.1
SD		5.7	8.1
98	7.1	92	83
100	7.2	104	75
102	7.2	83	75
105	7.1	102	62
107	8.0	78	86
110	8.2	87	82
111	8.0	98	82
116	8.2	108	79

TABLE 13. (Continued)

Subject No.	Grade	WISC IQ Score	LQ
117	8.2	92	75
118	8.2	101	69
119	8.2	90	71
121	8.2	105	66
123	8.1	96	60
Junior High			
X		91.0	75.3
SD		9.9	8.0
125	9.5	105	71
126	9.1	100	75
129	9.1	100	61
133	9.6	90	61
134	9.5	111	56
135	9.1	103	57
136	9.1	81	60
137	9.1	99	55
138	9.1	87	55
151	10.2	91	58
High School			
X		90.9	82.5
SD		9.2	7.4
All			
X		93.3	75.3
SD		9.3	11.3

TABLE 14. FORMULA COMPONENTS - SELF-CONTAINED SAMPLE

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
6	89	6.1	5.4	1.0	6.2	5.9	Rdg. comp.	0	5.2	88
7	94	6.3	5.9	1.0	6.2	6.1	Rdg. comp.	0	5.2	85
8	103	6.9	7.1	1.0	6.2	6.1	Rdg. rec.	.5	5.7	85
10	86	6.8	5.8	1.0	6.2	6.2	Rdg. comp.	0	5.2	83
12	91	7.3	6.6	1.0	6.2	6.7	Rdg. comp.	0	5.2	77
24	90	8.1	7.2	2.0	7.2	7.5	Rdg. rec.	1.4	6.6	88
33	87	9.2	8.0	3.2	8.4	8.5	Math./Sp.	2.9	8.1	95
46	93	8.4	7.9	3.2	8.4	8.2	Rdg. rec.	1.4	6.6	80
47	86	9.0	7.7	3.2	8.4	8.4	Math.	1.5	6.7	80
48	93	8.3	7.8	3.2	8.4	8.2	Rdg. rec.	1.3	6.5	79
54	87	9.1	7.9	4.2	9.4	8.8	Spelling	3.4	8.6	98
60	93	9.4	8.7	4.2	9.4	9.2	Spelling	2.9	8.1	88
64	86	10.3	8.9	4.2	9.4	9.5	Rdg. comp.	2.4	7.6	84
67	89	10.4	9.2	4.2	9.4	9.7	Spelling	1.6	6.6	70
87	87	11.6	10.6	6.2	11.4	11.2	Math.	3.5	8.7	78
96	88	12.8	11.2	6.2	11.4	11.8	Rdg. comp.	3.1	8.3	70
102	88	13.0	11.4	7.2	12.4	12.3	Rdg. rec.	3.9	9.1	74
104	84	12.5	10.5	7.1	12.3	11.8	Rdg. comp.	3.1	8.3	70
105	84	12.8	10.8	7.1	12.3	12.0	Rdg. comp.	2.6	7.8	65
118	87	12.9	11.2	8.2	13.4	12.5	Spelling	3.9	9.1	73
119	89	13.3	11.8	8.2	13.4	12.8	Rdg. rec.	3.9	9.1	71
123	85	13.6	11.6	8.1	13.3	12.9	Rdg. comp.	2.8	8.0	62
126	102	14.3	14.5	9.1	14.3	14.3	Math.	5.4	10.6	74
127	94	14.0	13.1	9.1	14.3	13.9	Math.	4.1	9.1	73

TABLE 14. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
129	82	14.7	12.0	9.1	14.3	13.7	Spelling	3.7	8.9	65
136	90	14.3	12.8	9.1	14.3	13.8	Spelling	3.9	8.1	58
138	89	16.0	14.2	9.1	14.3	14.9	Spelling	3.9	8.1	54
141	88	15.0	11.2	10.1	15.3	14.5	Rdg. comp.	6.0	11.2	77
143	93	14.1	13.1	10.1	15.3	14.5	Spelling	5.3	10.5	72
149	93	15.4	14.3	10.1	15.3	14.1	Rdg. rec.	4.8	9.1	64
153	87	16.9	14.7	10.5	15.7	15.7	Rdg. comp.	4.2	9.4	59
156	92	15.1	13.9	11.1	16.3	15.3	Spelling	4.2	9.4	61
$\bar{X}$	89.7									75.0
SD	4.6									10.8

TABLE 15. FORMULA COMPONENTS - MATCHED RESOURCE SAMPLE

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
4	95	6.8	6.5	1.2	6.4	6.6	Spelling	1.0	6.2	94
5	103	6.8	7.0	1.9	7.1	7.0	Math.	1.1	6.3	90
11	113	7.3	8.2	1.4	6.6	7.4	Math.	.6	5.8	78
14	96	7.2	6.9	1.2	6.4	6.8	Rdg. comp.	0	5.2	76
2	107	7.4	7.8	1.0	6.2	7.1	Spelling	1.7	6.9	97
18	98	8.1	7.9	2.1	7.3	7.6	Rdg. rec. and comp.	2.0	7.2	92
51	93	9.2	8.6	3.0	8.2	8.7	Rdg. rec.	1.6	6.8	78
34	95	8.4	7.9	3.0	8.2	8.1	Math.	2.5	7.7	95
36	94	8.1	7.6	3.0	8.2	7.9	Rdg. rec.	2.0	7.2	91
38	99	9.1	9.1	3.0	8.2	8.8	Rdg. comp.	2.7	7.9	89
55	90	9.1	8.2	4.1	9.3	8.8	Spelling	2.9	8.1	92
58	80	9.4	7.5	4.2	9.4	8.8	Math.	2.5	7.7	88
59	100	9.6	9.6	4.0	9.2	9.5	Math.	3.2	8.4	88
62	86	9.9	8.5	4.0	9.2	8.9	Math.	2.4	7.6	85
78	90	11.7	10.5	6.2	11.4	11.2	Spelling	4.6	9.8	88
88	94	12.3	11.6	6.2	11.4	11.8	Rdg. rec.	4.0	9.2	78
100	99	12.1	12.0	7.2	12.4	12.2	Spelling	4.1	9.3	76
97	88	12.9	11.4	7.2	12.4	12.2	Rdg. rec.	5.6	10.8	89
98	88	11.5	10.1	7.1	11.1	10.9	Rdg. rec.	4.0	9.2	84
112	93	13.0	12.1	8.1	13.3	12.8	Rdg. comp.	5.5	10.7	84
107	80	13.2	10.6	8.1	13.3	12.3	Rdg. rec.	5.6	10.8	87
122	100	13.5	13.5	8.1	13.3	13.4	Spelling	3.8	9.0	67
124	92	14.9	13.7	9.5	14.7	14.4	Math.	6.7	11.9	83

TABLE 15. (Continued)

Subject Number	IQ	CA	MA	Grade	GA	EA	Lowest Subtest	Lowest Subtest Score	AA	LQ
135	99	14.0	13.8	9.1	14.3	14.0	Spelling	3.8	8.1	58
133	82	14.1	11.5	9.6	14.8	13.4	Rdg. rec.	3.3	8.5	59
128	89	14.7	13.0	9.5	14.7	14.1	Rdg. comp.	5.0	10.2	72
125	88	15.6	13.7	9.5	14.7	14.6	Rdg. rec.	5.8	11.0	75
150	83	15.2	12.6	10.2	15.4	14.4	Math.	3.8	9.0	62
148	95	14.5	13.7	10.2	15.8	14.5	Math.	4.2	9.4	64
147	82	16.4	13.4	10.2	15.4	15.0	Rdg. comp.	4.5	9.7	65
152	83	16.3	13.5	10.5	15.7	13.4	Rdg. comp.	2.9	8.1	60
154	82	16.8	13.7	11.1	16.3	15.6	Math.	4.4	9.6	62
X	92.4									79.6
SD	8.0									12.0

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